

***SURFACE MODIFICATION USING AN ATMOSPHERIC  
PRESSURE GLOW DISCHARGE PLASMA SOURCE***

**ABSTRACT**

5           A method for producing stable atmospheric pressure glow discharge plasmas  
using RF excitation and the use of said plasmas for modifying the surface layer of  
materials. The plasma generated by this process and its surface modification capability  
depend on the type of gases used and their chemical reactivity. These plasmas can be  
used for a variety of applications, including etching of organic material from the surface  
10 layer of inorganic substrates, as an environmentally benign alternative to industrial  
cleaning operations which currently employ solvents and degreasers, as a method of  
stripping paint from surfaces, for the surface modification of composites prior to  
adhesive bonding operations, for use as a localized etcher of electronic boards and  
assemblies and in microelectronic fabrication, and for the sterilization of tools used in  
15 medical applications.

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